

November 9, 2005

TO: Rod H. Kubomoto

FROM: Patricia Wood *RM*
Facilities Section

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**HARVARD FIRE
BURNED AREA REPORT
FILE NO. 2-11.40**

Recommendations

1. Authorize us by copy of this report to provide confirmation to Flood Maintenance Division (FMD) of the potential sediment impacts to flood control facilities maintained by Public Works below the burned area. It is recommended that FMD monitor Stough, Upper Sunset, and Lower Sunset Debris Basins during storm events for sediment flow. The monitoring should continue for the next five years until the watershed has significantly recovered from the burn.
2. Authorize us to send copies of this report to the following entities appraising them of the potential impacts of the burn:
 - Supervisor Michael D. Antonovich's Office
 - City of Burbank
 - City of Los Angeles

Attachments

- A. Burned Area Map
- B. Description of Burn and Potential Sediment Impact
- C. Mudflow Phase Maps:
 - Attachment C-1, Phase 1 Map
 - Attachment C-2, Phase 2 Map
 - Attachment C-3, Phase 3 Map
- D. List of Residences Offered/Provided Mudflow Protection Advice

Summary of Potential Sediment Impact

The Harvard Fire, which started on September 29, 2005, burned approximately 844 acres in the City of Burbank. The burned area (see Attachment A), which covers Debris Producing Areas 1 and 2, is subdivided into a total of five subarea watersheds with Subarea Number 1 being further divided into six subareas. Detailed descriptions of the burn and sediment impacts in each subarea are contained in Attachment B. Mudflow deposition and hazard maps for varying levels of storm severity are contained in Attachments C-1 through C-3. During a design storm event (50-year frequency rainfall), Harvard Road, the De Bell Municipal Golf Course, the Wildwood Park area, and the Stough Canyon Nature Center, all maintained by the City of Burbank, could be impacted by storm produced debris flows.

At the City's request, Water Resources Division (WRD) staff met with City staff at these locations to develop debris protection measures for them. WRD's recommendations for these facilities are being transmitted separately to the City.

Also, nuisance flooding and sediment deposition may impact the driveways and garages of numerous homes along Country Club Drive between Upper Sunset Debris Basin and Lower Sunset Debris Basin. During the October 17, 2005, storm, sediment-laden flows from a burned natural side canyon outletted onto Country Club Drive below Upper Sunset Debris Basin. The City ordered an evacuation of the residents along Country Club Drive during the storm and the City's poststorm removal of sediment that deposited on the street. WRD recommends installing a temporary rail and timber structure at the top of Country Club Drive to provide additional debris retention at least during minor storms. Administration approved WRD's recommendation on November 2, 2005.

On October 19 and 20, 2005, Water Resources Division staff, at the City's request, offered and/or provided mudflow engineering advice to 36 residences located along Country Club Drive. The list of the residences is in Attachment D.


The approved Burned Area Report will be posted on the Internet at <http://www.ladpw.org/WRD/FIRE/>.

Rod H. Kubomoto
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If you have any questions regarding this fire report, please contact John Burton at 458-6188 or Hans Riedel at 458-6300.

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Attach. 

cc: Disaster Services (Dunn), Flood Maintenance (West Area), Programs Development (Pilker), Water Resources (Wood, Files)

HARVARD FIRE
ATTACHMENT A
BURNED AREA MAP
WITH DEBRIS PRODUCTION
QUANTITIES

ATTACHMENT B

Harvard Fire Description of Burn and Potential Sediment Impact

Fire Name: Harvard Fire
Date of Fire: September 29 through October 4, 2005
Burned Area: 844 acres
Location: Stough Canyon above the De Bell Municipal Golf Course, Wildwood Canyon above Harvard Road and Sunset Canyon above Upper Sunset Debris Basin in the City of Burbank. Refer to Thomas Guide Pages 533: H2, J2, H3, J3, and 534 A2, A3. (2003 Edition). The burned area boundary is plotted on Attachment A.

Vegetation Types Before Burn

- Grass
- Sage Scrub
- Chamise
- Oak Woodland

Improvements Damaged

No homes or major structures were lost.

Fire History

Public Works' records show three fires have previously occurred in the Harvard Fire area. The December 5, 1927, Verdugo Hills Fire burned approximately 3,744 acres and overlapped approximately 54 percent of the Harvard Fire area. The March 16, 1964, fire burned approximately 6,950 acres and overlapped approximately 90 percent of the Harvard Fire area. The November 16, 1980, fire burned approximately 4,384 acres and overlapped approximately 91 percent of the Harvard Fire area.

Potential Sediment Impact Below/Within the Burned Area

The burned area, which is located in Debris Production Areas 1 and 2, is subdivided into a total of five subarea watersheds. Subarea 1, which is tributary to Stough Debris Basin, is further subdivided into six subareas as shown in Attachment A.

The City of Burbank requested Public Works to advise its personnel on what temporary flood protection measures they can employ to protect existing structures, reduce flooding impacts on Harvard Road, and minimize flooding and debris flow impacts to the City of Burbank's Nature Center, golf course, and Police Department shooting range. Public Works' recommended measures will be detailed in a separate transmittal to the City of Burbank.

Subarea 1A

Subarea 1A has an area of 0.23 square miles and is located in Stough Canyon above the City of Burbank's Stough Park. The subarea is 57 percent burned yielding an adjusted debris potential of 19,600 cubic yards during a design storm (50-year rainfall frequency event). These flows will pass by the City's Nature Center to its rail and timber structure, which will debulk a portion of the sediment-laden flows. Debris in excess of the rail and timber structure's capacity will be conveyed in the flows that spill over the structure's weir into Subarea 1E. It is recommended the City monitor the structure and promptly after storms remove sediment deposited behind it. It is also recommended the City implement measures at the Nature Center to direct flows around the facility. The details of these measures will be contained in a separate transmittal to the City.

Subarea 1B

Subarea 1B has an area of 0.13 square miles and is located in a tributary of Stough Canyon above the City of Burbank's De Bell Golf Course. The subarea is 100 percent burned yielding an estimated debris potential of 17,400 cubic yards during a design storm. The subarea outlets into a debris basin maintained by the City. Flows from this subarea will be routed through the debris basin and pass into Subarea 1E. It is recommended the City monitor the debris basin and promptly after storms remove sediment deposited in the debris basin.

Subarea 1C

Subarea 1C has an area of 0.28 square miles and is located in a tributary of Stough Canyon in the City of Burbank's Wildwood Canyon Park above the City's De Bell Golf Course. The subarea is 100 percent burned yielding an estimated debris potential of 29,100 cubic yards during a design storm. The subarea outlets into another debris basin maintained by the City of Burbank. Flows from this subarea will be routed over the debris basin spillway into Subarea 1F. It is recommended the City monitor the debris basin and promptly after storms remove sediment deposited in the debris basin.

Subarea 1D

Subarea 1D has an area of 0.47 square miles and is located in Wildwood Canyon in the City of Burbank's Wildwood Canyon Park above the City's De Bell Golf Course. The subarea is 88 percent burned yielding an adjusted debris potential of 40,000 cubic yards during a design storm. The subarea outlets into another debris basin maintained by the City of Burbank. Flows from this subarea will be routed through over the debris basin spillway into Subarea 1F. Significant sediment deposition will likely occur along the stream and road upstream of the debris basin. It is recommended the City monitor the debris basin and promptly after storms remove sediment deposited in the debris basin

Subarea 1E

Subarea 1E watershed has an area of 0.10 square miles and is located in Stough Canyon the in City of Burbank's De Bell Golf Course. The subarea is 83 percent burned yielding an adjusted debris potential of 10,700 cubic yards during a design storm. The subarea outlets into another debris basin maintained by the City of Burbank. Additional sediment may be conveyed to this debris basin if the capacities of the debris control facilities in Subareas 1A and 1B are exceeded. Flows from Subarea 1E will be routed over the debris basin spillway into Subarea 1F.

Subarea 1F

Subarea 1F watershed has an area of 0.44 square miles and is located in the lower reaches of Stough Canyon in the City of Burbank's Stough Park, De Bell Golf Course, and Wildwood Canyon Park. The subarea is 30 percent burned yielding an adjusted debris potential of 18,300 cubic yards during a design storm. The subarea outlets into Public Works' Stough Debris Basin. Stough Debris Basin has a design capacity of 181,000 cubic yards, which exceeds the 135,100 cubic yard total adjusted debris production for Subareas 1A, 1B, 1C, 1D, 1E, and 1F. However, a significant portion of the debris production will be captured in the City's upstream debris basin and rail and timber facilities. It is recommended Flood Maintenance Division utilize the five percent full threshold for cleanouts of this facility.

Flows conveyed into Subarea 1F from Subarea 1E will be routed through the graded unlined channel in the golf course to a culvert passing under De Bell Road. It is recommended the City monitor this culvert and keep it clear of debris and sediment. Downstream of the culvert, the flows will continue through the golf course in a graded unlined channel to Stough Debris Basin. It is recommended vegetation in excess of the channel's design capacity be removed.

Flows conveyed into Subarea 1F from Subarea 1C will be routed through a series of graded unlined channels and culverts in the golf course. It is recommended the City monitor these culverts and keep them clear of debris and sediment and remove vegetation in excess of the channels' design capacities. The flows will then be routed through the culvert under De Bell Road to Stough Debris Basin.

Flows going over the debris basin spillway at the outlet of Subarea 1D will be conveyed along Harvard Road in Subarea 1F to the easterly inlet of Stough Debris Basin. The inlet comprises of a swale. During storms, major flows may have sufficient momentum to bypass the swale and thus the debris basin and can thus pose a safety hazard below on Sunset Canyon Drive and Harvard Road. It is recommended the City implement measures at the police shooting range to direct flows around the facility and measures on Harvard Road near Stough Debris Basin to direct flows into the facility. The details of these measures will be contained in a separate transmittal to the City. It is also recommended the City close Harvard Road above Sunset Canyon Drive during major storm events.

Subarea 2

Subarea 2 has an area of 5.3 square miles and is located in the La Tuna Canyon watershed. The burned portion of the subarea is near the corporate boundary between the Cities of Burbank and Los Angeles. The subarea is three percent burned yielding an adjusted debris potential of 168,200 cubic yards during a design storm. The burned condition results in a three percent increase over the subarea's unburned debris production potential. The debris-laden flows from this subarea will flow through the culverts in La Tuna Canyon Road (maintained by the City of Los Angeles) to Public Works' La Tuna Debris Basin. Due to the small proportion of area burned, it is recommended Flood Maintenance Division continue to use the 25-percent full cleanout threshold for La Tuna Debris Basin.

Subarea 3

Subarea 3 has an area of 0.42 square miles and is located in the upper reaches of Sunset Canyon in the City of Burbank. The subarea is 6 percent burned yielding an adjusted debris potential of 32,100 cubic yards during a design storm. The subarea outlets into Public Works' Upper Sunset Debris Basin. The design storage capacity of Upper Sunset Debris Basin is 16,000 cubic yards. Debris flows in excess of Upper Sunset Debris Basin's capacity will outlet to Subarea 5 and onto Country Club Drive. Due to the small size of the debris basin relative to the debris potential of the subarea, it is recommended Flood Maintenance Division pursue the necessary authorizations to lower the facility's cleanout threshold to five percent full for unburned as well as burned watershed conditions.

Subarea 4

Subarea 4 has an area of 0.21 square miles and is located in Deer Canyon, a tributary of the Sunset Canyon watershed. This subarea was unaffected by the Harvard Fire and yields an estimated 18,500 cubic yard debris potential during a design storm. This subarea outlets into Public Works' Sunset Deer Debris Basin, which has a design capacity of 5,000 cubic yards. The debris flow in excess of Sunset Deer Debris Basin's capacity will outlet to Subarea 5 and onto Country Club Drive. Due to the small size of the debris basin relative to the debris potential of the subarea, it is recommended Flood Maintenance Division pursue the necessary authorizations to lower the facility's cleanout threshold to five percent full for unburned as well as burned watershed conditions.

Subarea 5

Subarea 5 has an area of 0.43 square miles and is located in the lower reaches of Sunset Canyon. The subarea is 14 percent burned yielding an adjusted debris potential of 34,500 cubic yards during a design storm. The debris flows in excess of Upper Sunset and Sunset-Deer Debris Basins will also outlet into this subarea. The debris-laden flows are anticipated to flow to and through Country Club Drive until they deposit in Public Works' Lower Sunset Debris Basin. Lower Sunset Debris Basin has a

design storage capacity of 159,000 cubic yards, which is sufficient to capture the adjusted debris production from Subareas 3, 4, and 5.

On October 17, 2005, debris-laden flows did occur on Country Club Drive and the City had to undertake an evacuation of the residents in Sunset Canyon. Flood Maintenance Division personnel observed that the debris did not come from Upper Sunset or Sunset-Deer Debris Basins, but instead came from an unnamed natural side canyon that outletted onto Country Club Drive below Upper Sunset Debris Basin. Public Works is coordinating with the City to construct a temporary debris control structure across Country Club Drive below the outlet of this side canyon to provide additional debris storage capacity at least during minor storms.

On October 19 and 20, 2005, at the City's request, Public Works provided mudflow protection advice to 36 residences along Country Club Drive. The advice for most of the residences comprised mainly of recommending the residents place sandbags along their driveways in response to the augmented debris loads in the runoff conveyed in the street. For five residences, Public Works recommended placement of sandbags on their properties adjacent to natural drainage courses. Attachment D contains a list of the property owners who were provided advice.

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HARVARD FIRE
ATTACHMENT C-1
PHASE 1
POTENTIAL MUDFLOW
IMPACT AREAS

HARVARD FIRE
ATTACHMENT C-2
PHASE 2
POTENTIAL MUDFLOW
IMPACT AREAS

HARVARD FIRE
ATTACHMENT C-3
PHASE 3
POTENTIAL MUDFLOW
IMPACT AREAS

Attachment D

Harvard Fire List of Residences Offered/Provided Mudflow Protection Advice

Address	Advice Provided
611 Country Club Drive	Place sandbags across driveway.
620 Country Club Drive	Place sandbags across driveway.
631 Country Club Drive	Place sandbags across driveway.
661 Country Club Drive	Place sandbags across driveway.
691 Country Club Drive	Place sandbags across driveway.
701 Country Club Drive	Place sandbags across driveway.
702 Country Club Drive	Place sandbags across driveway.
708 Country Club Drive	Place sandbags across driveway.
721 Country Club Drive	Place sandbags across driveway.
731 Country Club Drive	Place sandbags across driveway.
736 Country Club Drive	Place sandbags across driveway.
751 Country Club Drive	Place sandbags across driveway.
752 Country Club Drive	Place sandbags across driveway.
800 Country Club Drive	Place sandbags across driveway.
811 Country Club Drive	Place sandbags across driveway.
840 Country Club Drive	Place sandbags across driveway.
845 Country Club Drive	Place sandbags across driveway.
850 Country Club Drive	Place sandbags across driveway.
881 Country Club Drive	Place sandbags across driveway.
906 Country Club Drive	Place sandbags across driveway.
918 Country Club Drive	Place sandbags across driveway.
945 Country Club Drive	Place sandbags across driveway.
949 Country Club Drive	Place sandbags across driveway.
1005 Country Club Drive	Place sandbags adjacent to natural drainage course.
1027 Country Club Drive	Place sandbags adjacent to natural drainage course.
1031 Country Club Drive	Place sandbags adjacent to natural drainage course.
1035 Country Club Drive	Place sandbags adjacent to natural drainage course.
1081 Country Club Drive	Place sandbags adjacent to natural drainage course.
1190 Country Club Drive	Place sandbags across driveway.
1210 Country Club Drive	Place sandbags across driveway.
1220 Country Club Drive	Place sandbags across driveway.
1260 Country Club Drive	Place sandbags across driveway.
1325 Country Club Drive	Place sandbags across driveway.
1365 Country Club Drive	Place sandbags across driveway.
1450 Country Club Drive	Place sandbags across driveway.
1480 Country Club Drive	Place sandbags across driveway.